DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name:	Carboline Company
Facility Address:	125 Fairgrounds Road, Xenia, OH 45385
Facility EPA ID #:	OHD 030963615

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

X
___ If yes - check here and continue with #2 below.
___ If no - re-evaluate existing data, or
___ if data are not available skip to #6 and enter"IN" (more information needed) status
___

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater		X		
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

X — If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

— If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

— If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

The earliest available land use records for the Carboline site indicate that a farm implement dealer conducted commercial activities on the site between 1944 and 1950. In 1953, the Moran Paint Company of Xenia, Ohio (Moran) initiated operations involving manufacturing of paint finishes for the automotive and appliance industries. The facility was purchased by Carboline in 1963, and continued manufacturing products under the Moran name (Ref. C-04).

Carboline specialized in manufacturing epoxy coatings. The facility blended various grades of liquid and solid paint materials and solvents to match the specifications of a particular order. The manufacturing process consisted of milling and high speed dispersal of raw materials (i.e., pigments, fillers, solvents, resins, and other additives) into a

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[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

liquid or paste. Approximately 700 virgin chemicals were stored on site for production purposes (Refs. C-02 and C-04).

Carboline was purchased by Sun Chemical Company in 1980, and the Moran product line was sold in 1982. Manufacturing operations continued at the site for the remaining products. Sun Chemical sold the assets of the Carboline Division to RPM, Inc. (RPM), in 1986. RPM closed the facility in December 2000 (Refs. C-02 and C-04).

When in active operation, the Carboline facility consisted of four primary buildings: raw materials and product storage warehouse, a three-story manufacturing plant, a dry pigment warehouse, and an office building. The storage building on the northwestern side of the site was reportedly destroyed by a tornado between 2005 and 2008, and the former manufacturing building is currently being demolished. The site is presently occupied by two tenants who appear to utilize the majority of the property, with the exception of the former manufacturing building in the southeastern portion of the property, which is in the process of being demolished. The tenants are Elsome Trucking and Seek-n-Destroy Paintball (Refs. C-02 and C-05).

During active manufacturing operations, the facility generated multiple RCRA hazardous waste streams, including waste paint thinners (F001, F003, and F005), waste paint materials (F003, F005, D001, D005, D007, and D008), and miscellaneous dust (D007 and D008). A permit application completed by Carboline in 1980 also lists the following waste codes as applicable to hazardous wastes generated in various quantities at the site: F003, F005, K078, K079, K081, K082, U002, U013, U031, U069, U088, U102, U112, U124, U125, U140, U154, U159, U160, U161, U169, U220, U238, and U239. At the peak of production, Carboline was generating approximately 180 tons of waste paint thinners and 95 tons of waste paint materials per year (Refs. C-01 and C-02).

Name	Description	Environmental Data
SWMU 1	Baghouse	Releases to soil and groundwater are unlikely.
SWMU 2	Hazardous Waste Storage Area	Cleanup was completed and inspected by OEPA in 2001.
SWMU 3	D-Waste Storage Tank	Cleanup was completed and inspected by OEPA in 2001.
SWMU 4	F-Waste Storage Tank	Releases to soil and groundwater are unlikely.
SWMU 5	Kettle Cleaning Area	Releases to soil and groundwater are unlikely.
SWMU 6	Back Pad	Cleanup was completed and inspected by OEPA in 2001.
AOC 1	Solvent Blending Tank	Cleanup was completed and inspected by OEPA in 2001.
AOC 2	NPDES Outfall	Cleanup was completed and inspected by OEPA in 2001.
Miscellaneous Unit	Underground Storage Tank	Tanks were removed in 1978; no further investigation needed.
Miscellaneous Unit	Building No. 6	Cleanup was completed; no further investigation needed.
Miscellaneous Unit	Burn Pit	Cleanup was completed; no further investigation needed.

According to a Final Inspection Letter dated March 14, 2001, no violations of Ohio CRO laws were identified at the facility during an inspection conducted on January 22, 2001. The letter also states that, "during [the] final closure period all contaminated equipment, structures, and soil were properly disposed of or decontaminated unless otherwise specified in OAC rules 3745-66-97, -67-28, -67-58, -67-80, -68-10" and "generated hazardous wastes were handled in accordance with all applicable requirements of Chapter 3745-52 of the Administrative Code." Ms. Cathy L. Altman of OEPA, who conducted the CRO Final Inspection, confirmed that no violations of Ohio CRO laws were identified and that all equipment and materials that could be removed at the facility had been removed (Refs. C-03).

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

___ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

___ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

___ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

___ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

___ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Carboline Company facility, EPA ID # OHD 030963615, located at 125 Fairgrounds Road, Xenia, OH 45385 under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

___ NO - "Current Human Exposures" are NOT "Under Control."

___ IN - More information is needed to make a determination.

Completed by	(signature)	John Nordine	Date	8-4-09
	(print)	John Nordine		
	(title)	Geologist		

Supervisor	(signature)	George Hamper	Date	8-11-09
	(print)	George Hamper		
	(title)	Chief		
	(EPA Region or State)	EPA Region 5		

Locations where References may be found:
US EPA Region 5 Records Center 77 W. Jackson, 7th Floor Chicago, Illinois 60604

Contact telephone and e-mail numbers

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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

References

Document Date	Title	Author	Reference (C-#)
August 15, 1980	Waste Report	Ardell E. Pitt	C-01
November 6, 1992	Preliminary Assessment / Visual Site Inspection Final Report	PRC Environmental Management, Inc.	C-02
March 14, 2001	Final Inspection Letter	OEPA	C-03
April 30, 2003	ASTM Transaction Screen Report	Brownfield Restoration Group, LLC	C-04
May 15, 2009	RE: RCRA Closure at RPM-Carboline Facility	Cherokee BGI, LLC	C-05

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